

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference
R00230WO01

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2005/000235

International filing date (day/month/year)

12.01.2005

Priority date (day/month/year)

22.01.2004

International Patent Classification (IPC) or both national classification and IPC

Applicant

Renesas Technology Corp.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/IP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/000235

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
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International application No.

PCT/JP2005/000235

Box No. IV Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
- ☐ paid additional fees under protest
- ☐ not paid additional fees
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with
- ☒ not complied with for the following reasons:

The present international application includes four inventions that do not satisfy the requirement of unity of invention.

Main invention: Claims 1-10, 13, 16 and 17

Second invention: Claims 11 and 19

Third invention: Claim 12

Fourth invention: Claims 14 and 15

Fifth invention: Claim 18

Search was made considering that claim 1 is "the first described invention," and as a result, it was found that since the technical feature of the main invention is disclosed as the prior art in documents [JP, 2002-40095, A (NEC Corp.), 6 February, 2002 (06.02.02), JP, 5-259306, A (Fujitsu Ltd.), 8 October, 1993 (08.10.93), and JP, 11-17058, A (NEC Corp.), 22 January, 1999 (22.01.99)], it does not appear to be novel. Therefore, the technical feature of the main invention cannot be considered to be "a special technical feature" in the sense of the second sentence of PCT Rule 13.2.

In the comparison between claims 11 and 19 (second invention) and the aforesaid prior art, "the special technical feature" of the second invention is a spacer exposed from an encapsulating member.

In the comparison between claim 12 (third invention) and the aforesaid prior art, "the special technical feature" of the third invention is a structure in which wiring is partially exposed on the surface of the encapsulating member.

In the comparison between claims 14 and 15 (fourth invention) and the aforesaid prior art, "the special technical feature" of the fourth invention is a structure in which the thickness of the encapsulating member is thin in the peripheral portions.

In the comparison between claim 18 (fifth invention) and the aforesaid prior art, "the special technical feature" of the fifth invention is a structure in which (1) a main semiconductor device is disposed on a substrate and (2) a semiconductor package is disposed on the main semiconductor device.

There is no technical relationship among these second to fifth inventions involving one or more of the same or corresponding special technical features.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

☒ all parts

☐ the parts relating to claims Nos. _____

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/000235

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	3, 7, 10-12, 14-16, 18-19	YES
	Claims	1-2, 4-6, 8-9, 13, 17	NO
Inventive step (IS)	Claims		YES
	Claims	1-19	NO
Industrial applicability (IA)	Claims	1-19	YES
	Claims		NO

2. Citations and explanations:

Document 1: JP, 2002-40095, A (NEC Corp.), 6 February, 2002 (06.02.02)
Document 2: JP, 5-259306, A (Fujitsu Ltd.), 8 October, 1993 (08.10.93)
Document 3: JP, 11-17058, A (NEC Corp.), 22 January, 1999 (22.01.99)
Document 4: JP, 2003-224234, A (Kyocera Corp.), 8 August, 2003 (08.08.03)
Document 5: JP, 9-181254, A (Fujitsu Ten Ltd.), 11 July, 1997 (11.07.97)
Document 6: JP, 2000-323623, A (Mitsubishi Electric Corp.), 24 November, 2000 (24.11.00)
Document 7: JP, 2003-273317, A (NEC Electronics Corp.), 26 September, 2003 (26.09.03)

The subject matters of claims 1, 2, 4-6, 8, 9, 13 and 17 do not appear to be novel in view of document 1 cited in the ISR. The subject matters of claims 1, 2, 4-6, 8, 9, 13 and 17 are disclosed in document 1.

The subject matters of claims 1, 2, 4-6, 8 and 9 do not appear to be novel in view of document 2 cited in the ISR. The subject matters of claims 1, 2, 4-6, 8 and 9 are disclosed in document 2.

The subject matters of claims 1, 2, 4 and 9 do not appear to be novel in view of document 3 cited in the ISR. The subject matters of claims 1, 2, 4 and 9 are disclosed in document 3.

The subject matters of claims 3, 7, 10 and 16 do not appear to involve an inventive step in view of document 1 cited in the ISR. A mounting substrate provided with two or more sets of terminals is a well-known technique. Furthermore, the disposition of terminals for external connection and terminals for testing is a mere matter of design variation. Moreover, laminating two or more semiconductor chips is usually employed. Still furthermore, using an encapsulating member for wrapping the outer edge portions of a substrate is a mere commonly used means.

The subject matters of claims 11 and 19 do not appear to involve an inventive step in view of documents 1 and 4 cited in the ISR. Disposing a spacer is described in document 4.

The subject matter of claim 12 does not appear to involve an inventive step in view of documents 1 and 5 cited in the ISR. Partially exposing wiring on the surface of an encapsulating member is described in document 5.

The subject matters of claims 14 and 15 do not appear to involve an inventive step in view of documents 1 and 6 cited in the ISR. Letting the encapsulating member have a relatively small thickness in the portion corresponding to the area where the terminals for external connection are disposed, is described in document 6. Furthermore, placing the said area in the outer circumferential

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portion is a mere matter of design variation.

The subject matter of claim 18 does not appear to involve an inventive step in view of documents 1 and 7 cited in the ISR. Disposing a main semiconductor on the surface of a main substrate and disposing a semiconductor package on the surface of the main semiconductor are described in document 7.

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International application No.

PCT/JP2005/000235

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

IV.3.

Meanwhile, since the subject matters of claims 2-10, 13, 16 and 17 are mere additions of well-known techniques to the subject matter of claim 1, these claims are classified into the same group as claim 1.

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Applicant's or agent's file reference R00230WO01		FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/JP2005/000235	International filing date (day/month/year) 12.01.2005	Priority date (day/month/year) 22.01.2004
International Patent Classification (IPC) or both national classification and IPC		
Applicant Renesas Technology Corp.		

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Fifth invention: Claim 18

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Claims 1-2, 4-6, 8-9, 13, 17 NO

Inventive step (IS)

Claims _____ YES

Claims 1-19 NO

Industrial applicability (IA)

Claims 1-19 YES

Claims _____ NO

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Continuation of:

IV. 3.

Meanwhile, since the subject matters of claims 2-10, 13, 16 and 17 are mere additions of well-known techniques to the subject matter of claim 1, these claims are classified into the same group as claim 1.